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AND PHOTOGRAPHIC ENLARGER
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NOTICES.

THE *Optical Magic Lantern Journal and Photographic Enlarger* is issued on the 1st of every month, price Two Pence, and may be obtained from all Newsvendors, Railway News Stalls, Photographic Dealers, or from the Publishers, at the following rates, post free:—

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NOTES.

Lady Lecturers.—There seems a growing tendency for ladies to give lectures illustrated by lantern slides, and during the last season many very effective lantern lectures have been given in various parts of the country by members of the fair sex. We hear of one lady who is at present organising a series of popular lectures with dissolving effects on a large scale for next season.

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Rontgen Rays in Court. — During the hearing of an action in one of the Chancery courts last month respecting an alleged infringement of bicycle tyre patents the Rontgen rays were used in court in order to show in what manner the wires lay in respect to the rim of the india-rubber.

◆ ◆ ◆

Photographic Convention.—This year the Photographic Convention of the United Kingdom is to meet at Newcastle-on-Tyne. The meetings commence on July 9th and last till the 14th.

Amateur Photographers and the Water Rate.—The Town Council of Harrogate now make a charge of five shillings a year for all amateur photographers who have a dark-room. We know of many amateur photographers who merely press the button and send their exposure to the "we do the rest firms" for development and printing. If those who do use the water supply grumble, what about those who photograph and use none; it must be hard on them.

◆ ◆ ◆

A Gold Medal for Mr. Graystone Bird.—Mr. Graystone Bird, of Milsom Street, Bath, has received the highest award, the gold medal and diploma, in the photographic section of the Bath Century Exhibition. Mr. Bird also received a Ross Symmetrical Anistigmat lens given by the makers.

◆ ◆ ◆

National Photographic and Allied Trades Exhibition.—From Friday, April 27th, to May 5th, the second annual exhibition will be held as before at the Portman Rooms, London. Mr. Arthur Brookes is running it, so that means it will be a great success. As we go to press on the 24th of each month we are unable to give an account of it in this issue, but we learn that about sixty firms will be represented at the exhibition. Entertainments are to be given each day, and also lecturettes of a scientific style, in which Messrs. T. C. and Cecil M. Hepworth (father and son), Mr. R. Child Bayley, and Mr. Horsley Hinton, will take part. The cinematograph will also play an important part, whilst the strains of the Imperial Band will be heard at intervals daily. Our advice to our readers is, if you can possibly do so, visit this exhibition, and you will be both amused and instructed.

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Death of Prof. Pepper.—At a ripe old age Prof. Pepper passed away last month. Some years ago, when engaged with the Royal Polytechnic Institution, his name became quite a household word in connection with the ghost illusion which he popularised. After the disbandment of the Polytechnic as a place of amusement Mr. Pepper lived in Australia for some years, but latterly his abode has been in one of the London suburbs. Mr. Ed. H. Wilkie, whose long and intimate connection with the late Royal Polytechnic Institution brought him into frequent contact with the late Prof. Pepper, has promised our readers a few details of his life and work, more particularly with regard to his productions at the Polytechnic. This will be looked for with interest in next Journal.

Harrogate Wants More Limelight Lectures.—At the annual meeting of the Harrogate Literary Society, comment was made as to the few lantern lectures which they had had of late, although when they did have them they were immensely popular. This matter was to receive early attention.

◆ ◆ ◆

African Views.—We learn from a reliable source that arrangements are being made to commence (after the present war is over) a series of lantern lectures which are to be given throughout Great Britain showing the glorious advantages of life, etc., in Africa with a view to getting people to settle there. We are informed that subjects pertaining to the present war are not to be included. Our informant ends up by stating "Of course many people will sell up their homes here and give up good situations to go out to this wonderful land to make their fortunes, but lo and behold many will be sorry, I have spent several years there and speak from experience."

◆ ◆ ◆

Free Lessons in Photography.—Kodak, Limited, are now giving free photographic lessons at their Oxford Street Branch. The subjects each day are as follows:—Monday, introductory, apparatus and its use; Tuesday, developing and fixing, demonstrations of different methods of developing rollable films; Wednesday, printing and toning Solio P.O.P.; Thursday, printing Dekko and bromide paper; Friday, enlarging and lantern slides. The lessons are given from 3 to 4.30 p.m.

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Dawbarn & Ward's Publications.—A complete list of books and periodicals published by Dawbarn & Ward, Limited, has just been issued. It contains particulars of books on various subjects, as well as those pertaining to photography. This 16 page list will, we understand, be sent free to any of our readers who apply. Their address is 6, Farringdon Avenue, E.C.

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"London—A Pilgrimage."—A re-issue of this work (by Gustave Dore & Blanchard Jerrold) is to be made in fortnightly parts at 6d. each. This work was formerly published at 2s. 6d. each part. The whole book comprises 180 illustrations, 54 of which are full page engravings, the size of the page being 12 by 15 inches. Those who prefer the volume complete can obtain it handsomely bound for 15s., from the offices at 12, St. Bride Street, E.C.

Intensification and Reduction of Lantern Slides.

By EDGAR CLIFTON.

ALTHOUGH in the majority of cases, the most satisfactory slide is one that is the result of straightforward development and fixation, there are times when one has either to be content with a poor slide or to resort to some process of after treatment to improve it. The ambitious exhibitor who does not mind wasting, no, we must not say that, using a dozen plates to get one perfect slide from a difficult negative can afford to ignore any tinkering with pictures not up to standard, but to the worker who has a number of transparencies to make in a limited time, any processes which help him to level up his results will be welcome.

When looking over a batch of slides which have been made from negatives of varying quality, it will be odd if there are not a few which are flat and thin, and lacking in the brilliancy which characterises the majority, while on the other hand there may be one or two which are decidedly thick and murky looking, or perhaps even of the "soot and whitewash" variety. Let us see what can be done with them.

First we must be certain that they are properly fixed, and to this end it is desirable that a liberal amount of fresh fixing solution be used. Plates which appear to require

intensification

may with advantage be transferred to a fresh dish of clean hypo solution and allowed to remain therein for a period nearly equal to that occupied by the visible fixation. This must be followed by a sufficient washing for say half-an-hour in running water, or an hour in water changed at least eight times in that period. When this latter course is adopted the slides should be drained as dry as possible each time the water is poured off. The slides may be intensified at once or dried and put aside to be dealt with at any subsequent date.

One of the most reliable intensifiers is that formerly known as Monckhovens, but now more generally attributed to Mr. H. J. Burton. It greatly increases the brilliancy of the slide by not only adding to the density of the shadows, but also in a degree clearing away any slight deposit which may obscure the highest lights. It is unfortunately very poisonous in its character, and requires handling with caution. The formula is—

For the Bleaching Solution.

Bichloride of mercury	100 grains.
Bromide of potassium	100 grains.
Water	10 ounces.

For the Blackening Solution.

Nitrate of silver	100 grains.
Crystallized cyanide of potassium	100 grains.
Water	10 ounces.

The solutions will keep for several months, but should not be exposed to light more than is absolutely necessary, although all the necessary operations may be conducted in daylight. They may be used repeatedly, but it is advisable to keep the used solutions in separate bottles, as they become less energetic in their action.

Having prepared these solutions and two perfectly clean dishes, preferably glass, we start operations by filling one of them with the bleaching solution and the other with clean water. The slide to be treated should be soaked in the latter until it is evenly wetted, say for two or three minutes, and then transferred to the bleaching solution, in which its appearance will rapidly change. It will at first become covered with more or less

uneven patches

of grey, which will in a few minutes give way to an even greyish white colour, which should be allowed to penetrate to the back of the film, when this takes place the plate is removed from the solution, carefully drained and again well washed, taking the greatest care that no splashes of hypo solution or any alkali come in contact with it. Washing completed, it is ready for blackening with the cyanide and silver, which is allowed to act until the colour of the deposit has changed to a brownish black right through the thickness of the film. The plate should then be immediately removed from the solution and washed for 10 to 15 minutes in running water. If after drying the density is greater than is considered desirable, it may be reduced to the necessary degree by immersion in a very weak hypo solution; this must, of course, be followed by thorough washing, as after fixation.

A less troublesome method of intensification, and one that is particularly useful when warm tones are required, is that in which a single solution containing a salt of uranium is employed. It may be purchased ready for use at most large dealers, or made from the following formula:—

Uranium nitrate	5 grains.
Red prussiate of potash	7 grains.
Water	2 ounces.

The solution may be used for a number of plates in succession, but does not keep well. The necessity for perfect fixation and thorough washing before intensification is even greater with this intensifier than with the mercury and silver method. The process of intensification is simple, the slide being simply immersed in the solution until the desired tone and density is obtained, and then washed for a few minutes in running water until all the yellowness has disappeared from the high lights. Too long washing will remove some of the deposit.

The reduction of an overdense slide is a more simple matter, and we have two reliable processes differing so widely in their results that we can attack the silver deposited on either the half tones or shadows at will. To take the first case, we will suppose that we have a slide excellent in all other respects but "thick" or over-developed; to cure this there is nothing better than the well-known ferridcyanide and hypo, generally known as Farmer's reducer. Various ways of making this have from time to time been published, but for certainty in working and freedom from any stain so necessary with a transparency the following will be found to answer well. Make a solution of hypo 1 ounce, water 20 ounces (clean, not old fixing bath diluted), and taking a sufficient quantity to well cover the plate, put it in a clean measure and drop a bright clear crystal of ferridcyanide (or red prussiate) of potash into it. It will soon colour the solution a bright lemon yellow and may then be poured into a clean dish, the plate being immersed and racked to **secure equality** of action, this should be done in a weak light as the solution rapidly decomposes in bright daylight. When the reduction is complete the slide has to be washed in the same way as after fixing. Reduction by this process may, of course, be done immediately after fixing, although a slight washing is advisable if the fixing bath be at all discoloured.

The other process, which depends upon the use of persulphate of ammonium, is more adapted for what are generally called "hard" pictures. We may have a slide which is perfectly clear in the high lights, just right in the half tones, but with patches of inky shadow which utterly spoil the effect on the screen. This can be remedied by immersing the slide for a few minutes in a weak solution, say 5 grains to the ounce of the persulphate, and stopping its action at the desired stage by plunging it into a 10 per cent. solution of sulphite of soda. The effect is most remarkable, any buried detail in the shadows making its appearance without the least loss of density in the more delicate parts of the picture. It is necessary that all trace of hypo should be removed before treating with the persulphate solution, which should be freshly made.

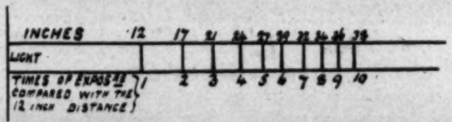
Points to be noted in order to secure success in any operation connected with transparency work are: absolute cleanliness of measures, dishes and fingers, freshness of solutions, and if any after treatment is required, perfect fixation and adequate washing.

* * *

Fitments for Slide Makers.

THERE are a few simple additions to the outfit of a slide maker which make all the difference between success and failure, simply because the comfort which they give enables the worker to concentrate his attention more completely on his development and other details.

First of all there is the scale, along which the distance of the printing frame from the lamp is measured. As the reader is no doubt aware, the intensity of light varies as the square of a distance, and therefore the calculation of, say, what exposure must be given if the plate be placed twice as far away becomes a little worrying when one is busy making slides. A scale graduated as below is therefore advisable (see Fig.). The numbers on the upper row represent inches from the light, and those on the lower row times of exposure compared with that required at 12 inches. Thus, if a slide requires 20 seconds at 12 inches, we must give it three times this amount (or 60 seconds) when placing it at 21 inches from the light. These distances are set off along the dark-room shelf, or where this is not a permanent feature they can be marked on a piece of tape.



Next to this comes for convenience a box in which plates can be popped whilst others are being exposed. No matter what sort of a box it is, it must be light tight, and it should by preference have a spring lid, so that it cannot be inadvertently left open. A fresh box of plates having been opened, there is no need then to remove and replace the wrappers continually. The result is a great saving of time, and also of finger marks on plates.

A printing frame for slides is a piece of apparatus, again, which does much to render slide making a real pastime. There are several very excellent styles on the market, but one is so simply made that anyone can construct it for himself.

Select a ½-plate or 5 by 4 printing frame, and remove first the triangular strips at the ends, replacing them by strips of wood to fill up the ends of the frame flush with the sides. Next fill up the front of the frame with a piece of wood, in the centre of which a hole has been cut exactly 3 inches square. The inside surface of this wooden front should be covered with black velvet. A thin piece of millboard is next cut of such size that it fits nicely into the frame with just the slightest play. In it, too, cut a central square aperture, but this time just over 3¼ inches. The hinged back of the frame is replaced by a solid piece, in the centre of which a pad of black velvet is glued. This pad should be about 3 inches square. Its function is to press the negative and lantern plate firmly into contact. Here is how the frame is used:—The negative is laid face up on the wooden front, and its position adjusted over the aperture till the desired amount of subject is included. The millboard sheet is then laid over it, the lantern plate laid in the aperture in the millboard, and the back put in and sprung down. The device costs only a few pence.

As an illuminant for the exposure of slides magnesium ribbon is probably the best. A very handy way to burn it is to simply cut a cork in half vertically and stick the two halves into a

wide-mouth bottle.

The coil of magnesium ribbon is placed in the bottle, the end being brought up between the two halves of the cork. A little piece of tin plate, with a slit in its centre, should be cut out to cover the cork and to prevent its catching fire. With this precaution this simple arrangement answers as well as can be wished, a little bit of magnesium being always left by which to draw out a further length. For lighting the ribbon the best thing is a little spirit lamp, which has a very hot flame and which, moreover, gives out scarcely any light itself.

The last fitment which need be considered in connection with slide making is an arrangement for drying. Absence of dust is one of the absolutely necessary conditions in finishing slides, and it is very little trouble to turn a good sized box into a drying chamber. An orange box with a goodly number of holes bored top and bottom and covered with muslin makes such a chamber, the slides being placed on nails driven into the sides or on the usual racks placed on shelves.

How Cinematographic Machines Work.—XI.

By **MAGNET.**

MR. W. C. HUGHES, whose name needs no introduction to the lantern world, has taken out several inventions connected with cinematographs. The following description refers to several improvements (in all he enumerates nine) made by him and embodied in a patent (No. 17805 of 1898).

His first improvement will be readily understood if the reader refers to the accompanying Fig. XXVI., which is a perspective view of the greater portion of the mechanism. The improvement consists essentially in mounting upon the spindle B^1 a pair of heavy rimmed wheels, C and C^1, one upon the inner and the other upon the outer sides of the door C of the case of the apparatus. The said wheels impart to the train of wheels E, E^1, and G, and consequently the other parts of the machine, a steady and even motion.

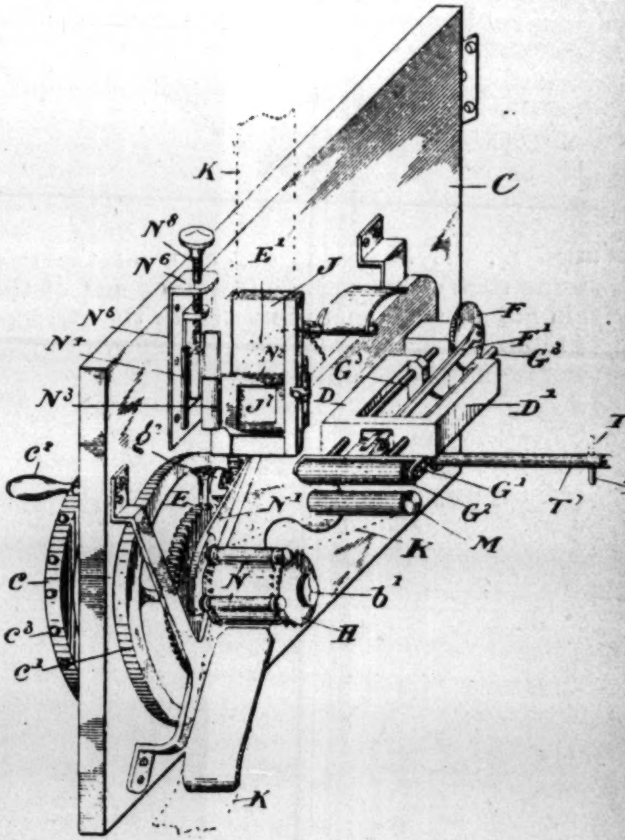


Fig. XXVI.

The second improvement refers to the receiving and holding spool, upon which the film is wound, and is also shown in perspective in Fig. XXVII. The drum L has a hollow spindle, L², arranged to form a spring, L³, capable of being compressed into the cavity L⁴ of L², to allow the hollow spindle of the spool upon which the film K has been wound, to be placed upon L², the turned-up end of L⁵ of the said spring then engaging with the outer end of the said hollow spindle of the spool for the purpose of retaining the same in position upon L² while the film K is being unwound.

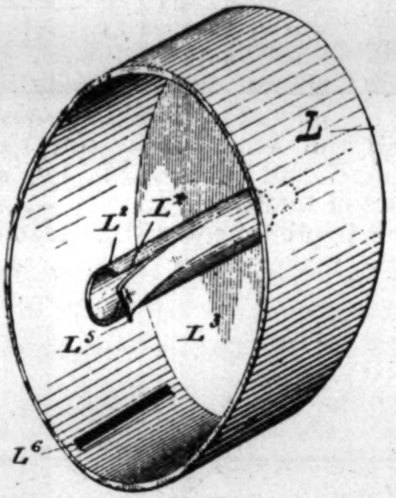


Fig. XXVII.

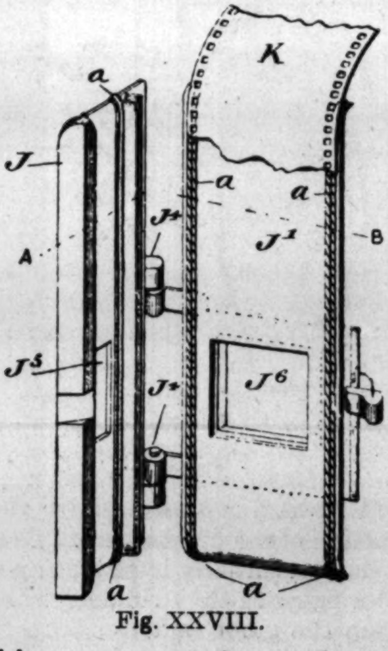


Fig. XXVIII.

A third improvement refers to the guide plate which, as seen in Fig. XXVIII., is composed of front and back plates, J and J³, hinged to each other and provided with sight apertures, J⁵ and J⁶ respectively, through which (when J and J³ are closed) the light passes. The plates J and J³ are of abnormal length, upon each side of the inner surface of both of which is cemented one or more silk cords A, being so arranged that when the said plates are closed together the perforated portions only of the film K are gripped between the cords. Thus the picture portion of the film is untouched by the guide and injury to the picture is thus prevented.

It not unfrequently happens that in the hurry of removing a used film and placing a new one in position in the guide plate, that the picture upon the film when at rest is not absolutely true with the exposure aperture. A plate N² having an attached piece N³ arranged to slide in a vertical guide, N⁴, fixed upon a plate, N⁵, attached to the door C on the upper end of N⁵ having a return end N⁶, for the reception of which, when C is closed, a slot, N⁷, is formed in the roof A of the containing case of the apparatus, the said return end N⁶ carries a screw N⁸, the lower end of which is loosely connected to a lug, N⁹, formed upon the upper extremities of the sliding plate N³, motion being imparted to N² by the rotation of the screw N⁸, by the means of a milled head thereon when the door C is closed. This arrangement will be clearly understood by referring to Fig. XXIX.

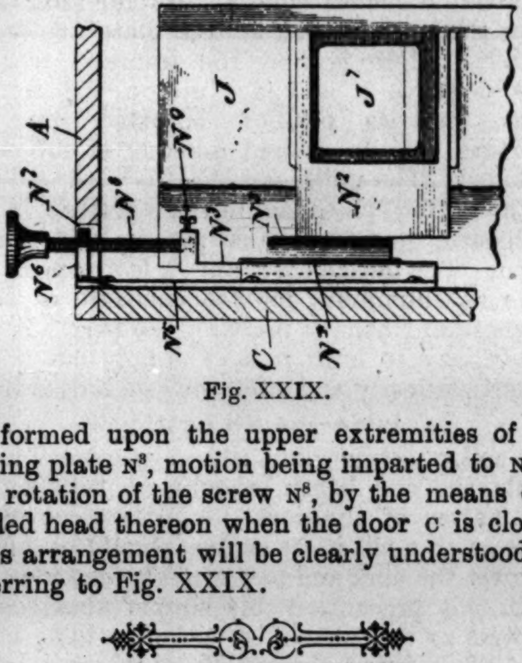


Fig. XXIX.

* * *

Another Field for Lantern Slide Work.

By ALBERT TRANTER.

IN order to appeal to that "pride of county" which is so often to be met with amongst educated persons, and at the same time to suggest a fresh scope for lantern slide work to those who make it their object to cater for the intellectual wants of that important section of the society of this country served by the instrument named at the head of this publication, the following ideas will probably for that purpose be found worthy of attention :—

The first thing to be considered is whether any particular county under consideration can boast of possessing the birth-place, residence, or other association of sufficient interest and number to enable an illustrated history to be prepared, and to this end a published history of the county should, if possible, be obtained and carefully perused, though such a volume should not be the only source of information to be drawn upon, as the personal knowledge of the person engaged in such work should be utilised, and the names of living celebrities should be included in addition to those who in the past have had the making of the county's history—those who have made a name for themselves in the realms of government, letters, and the fine arts.

Take, for instance, the county of Gloucester, with which I am pretty well acquainted. Would not the **county families** of Bathurst, Somerset, and Berkeley offer scope for work of this description?

Taking such to be the case, a valuable work for reference in such an undertaking would be found to be the volume entitled "Gloucestershire Achievements," by the Rev. Samuel Lysons; and others would be Atkyn's, Fosbrook's, Rudge's, and Rudder's histories of the same county—all written a good many years ago, but giving many particulars not to be found in more recent works.

To prepare histories of all the counties of Great Britain would be a big order for any one lantern slide producer, and would, I think, in consequence have to be delegated to some gentlemen who would have sufficient time to go into the past and present histories of the different shires constituting the British Isles.

The study of antiquarianism is really a most important study for gentlemen, for where is the individual holding any position of trust who can afford to disregard the history of the past? And is not his professional and intellectual welfare generally dependent on the works of those pioneers and masters of thought who are rightly regarded as the country's pride? and which works should be held in reverence as bulwarks against the committal of crimes and the holding of erroneous ideas which are the outcome of ignorance; and does not, in this connection, that great legal maxim, "Ignorance of the law excuseth no man," apply to those who in any way are put in any such position of trust? And would not such slide subjects as those I have described be of value to those who while holding such position of trust are at the same time devotees to the instrument before referred to, and which may be described as one of the most powerful media for the waging of the holy war against spiritual and intellectual darkness, in contradistinction to the war which the ordinary soldier wages against mere material bodies; that is to say, the war against *spirit* instead of against *matter*; and also in waging war against the inherent evil which (according to certain theologians and metaphysicians) is resident in such matter, and to which evil the human body is but a perishable medium, the existence of which can only be justified by its subjection to certain principles of religion or ethics.

* * *

Silhouette Slides.
By Theodore Brown
Nº 15
The Rocking Horse.

THE subject of the present mechanical silhouette slide is the common rocking-horse found in most nurseries, and always claiming a large portion of the children's attention. I have before remarked that the simplest subjects often give rise to the most effective slides, and our readers will, I am confident, find this present slide no exception to the rule. The subject is not a very deep or elaborate one; I do not pretend that it is, but I do claim that it is most effective when seen on the screen, and have no doubt but that those readers who make the slide for themselves will fully bear out the statement.

With the help of the accompanying diagrams no reader should experience the least difficulty in following the detailed description of the construction of this mechanical slide.

First, we employ the usual wooden framework of the ordinary dimensions. Any reader who sees this "series" for the first time will find a description of this framework in back numbers of the OPTICAL MAGIC LANTERN JOURNAL, and, moreover, the diagram Fig. I. shows quite clearly its construction (C^C, C^C and L are three of its sides) so that we need not stop over this point but can pass on to the next.

This deals with the fixed glass K (Figs. I. and II.) and the manner in which it is fitted up. First, a small round block F (Figs. I. and II.) furnished with a pin is glued to its interior surface. Its position, as seen in Fig. I., is in the middle of the fixed glass, and near the bottom.

The rocking-horse D is now cut out of one piece of thin metal—tin, brass, and tinned iron are all suitable for this purpose—and the foot G is cut out of the same piece of metal, *i.e.*, the horse and the foot G are in one piece.

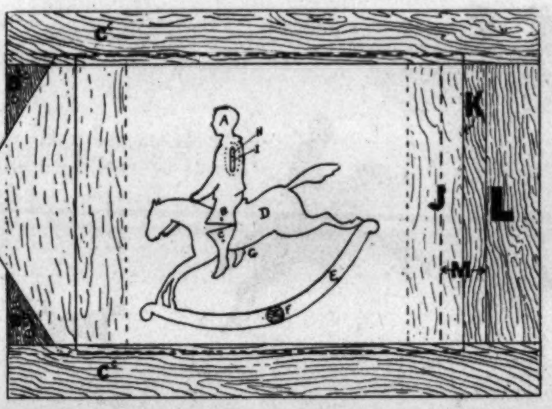


FIG I.

The boy's leg C is cut out of the same material to the shape shown in Fig. I., and pivoted to the body of the rocking-horse. The youthful rider's body and arm is then cut out, and after the long narrow slot I (Figs. I. and II.) has been made in it, it is pivoted to the horse's body at the point B. The rocking-horse, bearing its rider, is then pivoted to the block F on the fixed glass by means of the pin before mentioned.

On the interior surface of the sliding glass A^A, is glued a wooden block bearing a flat tongue H (Figs. I. and II.). The shape of this tongue is best illustrated in the sectional diagram Fig. II. This tongue works in the slot I cut in the rider's body. J represent the edge of the sliding glass, the movement of which is limited by the two triangular blocks B^B, B^B, screwed to the framework.

The distance the sliding glass can move through is shown at M (Fig. I.).

It will be noticed that in the diagram, Fig. I., I have not represented any of the numerous toys and games that would be sure to litter the floor of every nursery, but the reader may paint these in himself on the interior surface of the fixed glass. It would not be a bad plan to paint a small cat or dog in the act of watching the evolutions of the rocking-horse (as at the head of this article). It is quite surprising how the observance of a small point like this will add to the general effect when the slide is exhibited.

In Fig. I. the sliding glass is shown pulled out; the horse will then be leaning forward, and the boy sitting bolt upright upon its back. We push the sliding glass in; what will happen? The flat tongue H, working in the slot I, pushes the boy back, but by reason of its flatness always keeps him perfectly upright. The boy's body is connected to the rocking-horse at B, and the horse is pivoted at F, so that it is pulled over, and caused to rear up on its hind legs. The boy always remaining perpendicular is thus brought nearer the horse's head—or perhaps it would be more correct to say the horse's head is brought nearer the boy's body—and the appearance of the rider leaning forward a trifle is thus obtained. At the same time the boy's hip is brought into contact with the pivoted leg, and throws it back a little. Thus we obtain a perfectly natural representation of a boy riding a rocking-horse.

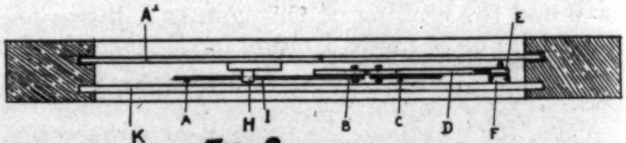


FIG. 2.

One could enter into a discussion as to the cause of every movement, and show that the tongue H would slide down nearly to the bottom of the slot I, and then rise to the top again, but this is totally unnecessary. Sufficient working instructions have been given to enable the reader to make a perfect model, and if he desires to know the exact reason for every movement, a few minutes experimenting with a model will explain it to him far better than any description in words.

DIORAMIC EFFECTS AT THE EGYPTIAN HALL.—There has of late been a lament as to the lack of dioramic effect exhibitions. Those interested in this branch of lantern work will be pleased to hear that Mr. C. W. Locke, who for many years was operator to Professor Malden, is filling an extended engagement with Mr. Maskelyne at the Egyptian Hall, Piccadilly. Mr. Locke is one of the most clever operators with the triple lantern, and is exhibiting daily some very telling effects.

Hints and Formulæ.

A New Reducer for Lantern Slides and Enlargements.

MANY slide makers have appreciated the wonderfully beneficial action of persulphate of ammonium on slides and prints which suffer from chalkiness. Messrs. Lumiere, the introducers of persulphate, have now added another reducer to the already long list of these useful solutions. This is ceric sulphate in 10 per cent. solution, with the addition of a little sulphuric acid. Like persulphate, it is a perfectly stainless reducer, which does not, so far as appears at present, possess the distinctive quality of persulphate of first attacking the dense portions of the picture.

The slide maker, to whom perfectly clear films are indispensable, will, we anticipate, welcome this new addition. The solution, the use of which for reduction purposes is patented, is sold by Messrs. L. Gaumont & Co., of Cecil Court, Charing Cross Road, London, W.C.

A Summer Process

for obtaining very charming warm tones on lantern plates is that which has been strongly recommended by Mr. C. Welborne Piper. It is particularly useful for softening down and mellowing slides with a tendency to harshness. In practice the process is simplicity itself. A solution of potass bichromate is made of strength 10 grains per ounce. This forms the basis of three separate baths (each giving distinctly different results), which we may call the chlorising, bromising, and iodising, inasmuch as they convert the silver image into chloride, bromide, or iodide. Let us call this bichromate solution A. Then the chlorising bath is A, 1 fluid ounce; strong hydrochloric acid, 5 drops. The bromising bath is A, 1 fluid ounce; nitric acid (strong), 5 drops; potass bromide, 5 grains; The iodising bath is A, 1 fluid ounce; potass iodide, 5 grains; strong nitric acid, 5 drops. The slide is developed to a black tone, fixed and washed as usual, and placed in one or other of these until bleached; it is then rinsed and left in a weak solution of potass meta-bisulphite till all yellow colour is gone from the high lights. It is then washed, dried, and set in the sun. The tone varies to some extent with the plate, but will generally be found to be reddish-brown by the chlorising bath; cool grey by the bromising solution, and chocolate-brown by the iodide mixture. In all cases the slide is softened, and many slides which, while they are pleasing in the hand, are too hard when projected, will be wonderfully improved by this process. The results, it may be added, are quite permanent after the slide has been exposed to sunlight. This operation is a necessity (at any rate, in the case of the first and second processes). Hence our title.

* * *

*Window Transparencies.**

By A. J. H.

THOSE who have had experience in the making of lantern slides are well aware that however beautiful a glass positive may appear when examined by transmitted light, that is when held up towards the light and looked through, its qualities as so considered cannot be taken as a criterion for judging of the appearance it will have when projected upon the screen by the magic lantern.

To the eye the glass positive, so examined, may have everything desirable—crispness, softness, abundance of gradations of lights and rich transparent shadows, but all these may suffer by probation when subjected to a cross examination in the ordeal of the lantern light.

The knowledge acquired by a long experience in handling lantern slides is the only surety one can have that his judgment is just when decision is given in opposition to the criticism of one who thinks his estimate of apparent virtues in the slide is true and righteous altogether.

With wet collodion the conditions controlling the production of good work, that is work good for the purpose intended—lantern projection, are more in abeyance to the operator and a uniformity of results more constant. But it is otherwise with the making of lantern slides with gelatine plates. There is not the same assurance that the products will be always the same under the same conditions.

With wet plates if the collodion is properly constituted and the bath is in good working order, the work becomes almost automatic. However, these qualities, which, militate against the slide's perfection, are by no means inimical to the beauty of results when the positive is intended to be hung up at a window.

Window transparencies may be made either by contact printing or by reduction or enlargement in the camera.

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* "Amer. Jnl. of Photy."

Contact printing is perhaps more generally employed when the negative is of a proper size for framing.

If a matt is employed to cut off marginal portions, care should be taken to secure the thinnest possible paper which shall be thoroughly opaque, otherwise the margins will be hazy. A pad in the printing frame is also necessary to insure perfect contact of the two surfaces.

It is generally advisable to employ a slow variety of gelatine plate, one in which there is a percentage of iodide of silver. But, if care is taken in exposure with a rapid plate so as not to produce halation or blurring of the high lights, as good results may be obtained. The double coated plates are excellent for this purpose, and the plate which is known in trade as Carbutt's Process Plate, is especially adapted for the production of brilliant transparencies.

The writer does not know whether the Carbutt A and B plates are still made, but if in the market, the photographer will find them most excellent for making transparencies.

(*To be continued.*)

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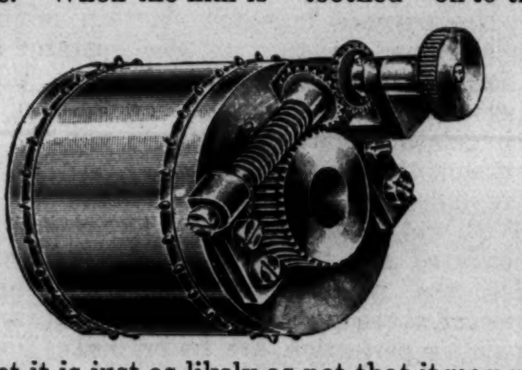
NEW APPARATUS.

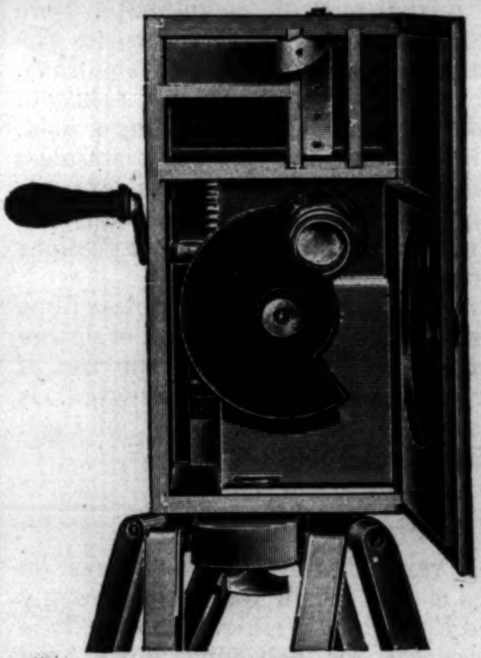
ADJUSTABLE SPOCKET FOR CINEMATOGRAPHS.

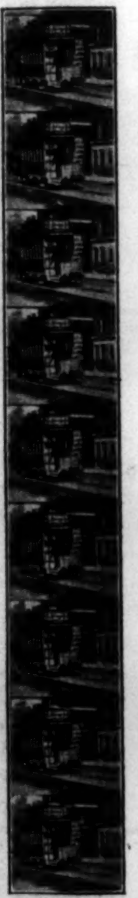
A patent has been applied for by the Prestwich Manufacturing Company for an adjustable spocket for use in connection with cinematographs. When the film is "toothed" on to the spocket it is just as likely as not that it may not be quite within the limits of the registration mask, but by means of this arrangement a turn of a knob suffices to take up a percentage of the film or *vice versa*, thus ensuring what is known as the exact framing of the picture. Our illustration shows the principle very clearly, and it will be noted that the gear wheel is fixed to the main driving spindle and the adjustment is made by turning the milled head screw.

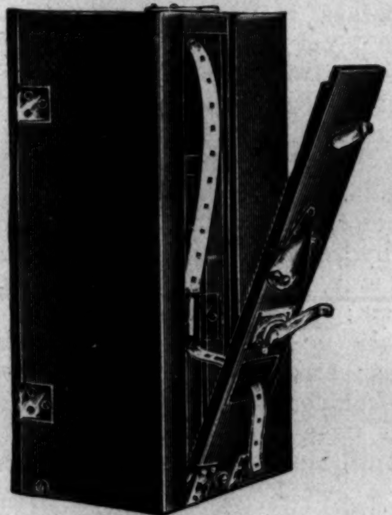


"LA PETITE" LIVING PICTURE CAMERA AND PROJECTOR.

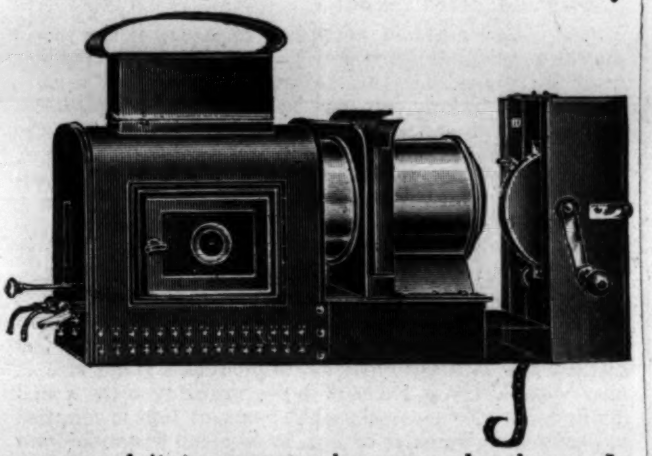
Mr. W. C. Hughes, of Mortimer Road, Kingsland, knows when he has got a good thing, and he also knows that the above mentioned apparatus is good. It is small, and the size of the pictures taken by it is small, as shown in cut,







but on the other hand it is beautifully made and it works with great precision. With this apparatus, of which we append several illustrations, not only can negatives be taken, but the same apparatus can be fixed in front of an ordinary lantern from which the ordinary projection lens has been removed, for showing the pictures on the screen. By means of it transparencies may also be made from the negatives. The mechanism is so geared that for ordinary subjects two turns of the handle per second is all that is necessary in the way of speed. With the outfit a developing frame is supplied; this frame so holds a length of film that it can be developed in a dish 12 by 10 inches.



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PATENT INTELLIGENCE.

The following List, relating to current Patent Applications, is compiled expressly for the "Optical Magic Lantern Journal" by W. P. Thompson & Co., Patent Agents, of 322, High Holborn, London, W.C., to whom all enquiries for further information should be addressed.

No. RECENT PATENT APPLICATIONS.

4432. 8th March, 1900. Charles Raleigh. Improvements in apparatus for exhibiting animated pictures.

4433. 8th March, 1900. Charles Raleigh. Improvements in apparatus for exhibiting views consecutively.

4434. 8th March, 1900. Charles Raleigh. Improvements in cinematographic apparatus.

4435. 8th March, 1900. Charles Raleigh. Improvements in apparatus for exhibiting pictures.

5076. 17th March, 1900. John Edward Thornton and Charles Frederick Seymour Rothwell. Improvements in the means of viewing the enlarged pictures obtained by optical projection.

5292. 20th March, 1900. John Joseph Frawley. Improvements in projection apparatus. (Complete.)

5444. 22nd March, 1900. Charles Henry Stonebridge Improvements in lanterns (Complete.)

5451. 22nd March, 1900. Philippine Wolff. Improved appliance for producing a rapid consecutive movement of pictures in apparatus for exhibiting animated pictures. (Complete.)

5453. 22nd March, 1900. George Royle and William Richard Wynne. A new or improved optical toy.

5564. 24th March, 1900. Alfred Charles Jackson Improvements in dark-room lanterns. (Complete.)

5646. 26th March, 1900. Eugène Doyen. Apparatus for use in viewing cinematographic or other pictures.

6086. 2nd April, 1900. Thomas Thorp. Improvements in the method of and means for taking and projecting photographs.

6138. 2nd April, 1900. Arthur Freemore Spooner. Improvements in and relating to synchronous motors, more especially applicable to combined cinematographic and phonographic apparatus. (Henri Joly, France.)

6232. 3rd April, 1900. Samuel Timings. Improved means for holding and displaying a series of photographic or other pictures.

6235. 3rd April, 1900. Melvin Thomas Stone. Improvements in panoramic cameras. (Complete.)

6351. 5th April, 1900. William George Heys. (Ludwig Senfter and Hugo Terrot, France.) Improvements in and relating to kinematographic instruments.

6531. 7th April, 1900. Jean Itier and William Charriere Elborough. A process for obtaining objects in relief by means of photography. (Date applied for under Act, 15th February, 1900, being date of application in France.)

6533. 7th April, 1900. Frederick Murray Browne and Richard Rowe. Photomatic-telegraphy by electricity for transmitting pictorial particulars so as to reproduce from distant places facsimiles of direct portraitures automatically and speedily.

18924A. 9th April, 1900. George Frederick Hatton. Improvements in apparatus for viewing and exhibiting what are known as animated photographs. (Date claimed under Act, Rule 19, 20th September, 1899.)

6929. 11th April, 1900. William Henry Harvey. Improvements in prism telescopes.

6933. 12th April, 1900. William Henry Payne. Improvements in acetylene gas generators. (Complete.)

7035. 14th April, 1900. Henri Louis Huet and Achille Daubresse. Improved cinematoscopic, cinematographic, chronophotographic, and chromophotographic apparatus.

Copies of the following specifications may be obtained by remitting 1/- for each specification to W. P. Thompson & Co., Patent Agents, 322, High Holborn, London, W.C.

SPECIFICATIONS PUBLISHED.

22613 of 1899. Pollak, Virág, Egger & Silberstein. Apparatus for photographically recording oscillating rays of light.

24720 of 1899. Dallmeyer. Photographic lenses.

6202 of 1899. Lee & Turner. Means for taking and exhibiting cinematographic pictures.

Correspondence.

SLIDES ON SPOOLS.

To Mr. J. Hay Taylor, Editor.

Dear Sir,—Would it be possible to get a series of slides printed, sketched, or painted on films as suggested on page 124 of your last year's Journal, which could be made to travel along the space usually taken up by a to-and-fro carrier. If so, then Sir, your manufacturers have provided the "long felt want," for all we would have to do would be to order certain spools, or would it be possible to float off the films on the present lantern slides and attach them to a thin transparent film. A Chinese pupil of mine tells me of having seen the Passion play in Perth by the Fisk Jubilee Singers on a kinematoscope film, but the whole thing only lasted a quarter of an hour. What a number of sermons could be got from this film if it had been possible to work it slowly like ordinary lantern slides.

Again, is it possible to rig up a lens and frame, whereby I could focus pictures down to lantern size and then sketch them on the film as already suggested in your journal.

Any more news *re* portable lantern outfits?

The good accounts of users of Rilford generator caused me to show it to Frost & Shipton, who imported one. I observe the Optical Magic Lantern Journal is displayed in their window.

Yours as ever,
P. NEWLAND.

Leederville, W. Australia.

[We do not know of any firm at present who makes a special feature of supplying lantern slides on spools. Relative to the Passion play, this set has long been obtainable as single lantern slides; both Messrs. York & Son and Mr. E. G. Wood publish a set. By means of an ordinary photographic camera, you can reduce picture and sketch the outline.—Ed.]

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Notes and Queries.

W. G. Clements.—The Injector jet will suit your requirements in every way. We note that you want a good light, and that you are to take house gas from the mains and oxygen from a cylinder. When using a single burner you can easily regulate the supply of gas from cylinder by means of a fine screw-down tap or valve which may be obtained from most dealers, but for general convenience it is preferable to get an automatic regulator.

J. Arnold Wright (U.S.A.).—Immediately on receipt of your letter of complaint we communicated with the firm whose advertisement appeared in this Journal, and in reply were informed that the goods were packed up on February 15th, and were supposed to have been dispatched, but on receipt of our letter the matter was at once gone into, the result being that the small box was found among some of the empties. It was at once sent on to you with an explanation. The firm mentioned is of the highest class, and they regret that the oversight has occurred. Ere you read this, you will have received the goods.

J. Dodshon.—We filled in Mr. T. C. Hepworth's address and posted the letter.

J. J. Lane wants to know how to calculate the size of disc any particular lens will give at a certain distance from the screen, etc. *Ans.*—First of all make sure as to the focus of the lens, this may be ascertained as follows:—On say the wall opposite a window, pin up a sheet of white note paper, hold the lens in front and move it to and from the paper until some distant object (chimney pot or tree) is sharply in focus, then carefully measure the distance from the sheet of paper to a point midway between the front and back combinations of lens, this distance will be the focus of the lens. Now for the other calculations. Let A represent focus of lens, B diameter of slide (*i.e.*, 3 inches), C diameter of disc, D distance between lantern and screen. If you wish to ascertain how many feet distant the lantern must be to produce a given size of disc with a given focus of lens, multiply C by A and divide by B. To ascertain what focus of lens is required to produce a given size of disc at a given distance from screen, multiply D by B and divide by C. To ascertain what size of disc will be produced by a given focus of lens at a given distance from screen, multiply D by B and divide by A

$$\frac{C \times A}{B} = \text{distance in feet.} \qquad \frac{D \times B}{C} = \text{focus of lens.}$$

$$\frac{D \times B}{A} = \text{diameter of disc.}$$

Operator.—The effect mentioned when using your saturator is doubtless caused by free ether in one of the pipes; perhaps you have overcharged it. Remove all ether in the way mentioned in an article in this Journal a couple of months ago.

Edgar Scott.—In further reply to your query in last Journal, we have been informed by a correspondent that Sciopticon lanterns are still obtainable from Mrs. Smith, 10, Highbury Quadrant, N.

J. J. Vezey.—We thank you for your letter, and have communicated the information as above.

Morse Code.—To use your apparatus *a la* searchlight, remove the front of lantern containing the lens, unscrew the lenses of condenser and use one only, placing the flat side next the light, and adjust the distance of the light from condenser. This makes practically a lime-light box as used for theatrical work; the diameter of the condensers of the latter is, however, greater than that used for lantern projection.

J. C. Burrow.—We think you must be a comparatively new reader of this Journal, as for some years past we have written practically all that can be said about ether saturators. If you will get the January numbers of this Journal for several years back, you will be able to find from the index for previous volume, which is contained therein, reference to any amount of articles on the subject, and then you will be able to order just such copies as you desire. We think our publishers can supply most of them. If, however, you wish any definite questions answered, we shall be pleased to let them have attention.

A. Thurburn.—It is just as the lecture was given, and the information is altogether on the authority of the lecturer.